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Proposed plan, Idaho Pole Superfund site
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April 1992

# Proposed Plan

## Idaho Pole Superfund site

By the Montana Department of Health and Environmental Sciences
and the U.S. Environmental Protection Agency

## Agencies select preferred remedy for the site

The Montana Department of Health and Environmental Sciences (MDHES) and the U.S. Environmental Protection Agency (EPA) have identified a plan for the cleanup of the Idaho Pole Superfund site in Bozeman, Montana. This plan is referred to as the "preferred remedy" and is presented in this document, the Proposed Plan. MDHES is the lead management agency and EPA is the support agency. MDHES and EPA request public comment on the preferred remedy, all of the other alternatives and the Feasibility Study. MDHES and EPA may retain or modify the preferred remedy, identify other alternatives presented in the Proposed Plan, or identify more appropriate alternatives based on new information or public comment.

**The preferred remedy - a summary:**

The preferred remedy for the site consists of biological treatment for contaminated soil and groundwater. Contaminated soil excavated from the former roundhouse area, from the area north of the pole plant buildings, from two nearby ditches and from the pasture north of U.S. Interstate 90 will be biologically treated in land treatment units on site (Soil Alternative 4 - Excavation and Biological Treatment). The excavated soil will contain some oily wood treating fluid. Contaminated soil under the pole plant buildings and I-90 will be left in place and flushed with hot water and steam to remove as much oily wood treating fluid as possible and biologically treated in place (Soil Alternative 6 - Soil Flushing and In-Situ Biological Treatment).

Groundwater from the pole plant area to the pasture will be pumped and biologically treated at the surface (Groundwater Alternative 3 - Pump and Biological Treatment). Oxygen and nutrients will be added, and the water will be pumped back underground to enhance in-place biological treatment by naturally occurring bacteria (Groundwater Alternative 4 - *In Situ* Biological Treatment).

**This Proposed Plan:**

1) Identifies the preferred remedy selected by MDHES and EPA and explains the reasons for that preference;
2) Outlines the various alternatives that MDHES and EPA evaluated and compared for the Idaho Pole site;
3) Highlights key information in the RI/FS and administrative record;
4) Seeks public review and comment on all of the alternatives described;
5) Provides information on how the public can be involved in the remedy selection process; and
6) Fulfills public notice requirements outlined in the Comprehensive Environmental Response, Compensation and Liability Act, section 117 (a), and the National Contingency Plan, 40 CFR Part 300, section 300.430(e).

## Mark your calendar and get involved

Public involvement has been an integral part of the Superfund process at the Idaho Pole site. The community members near the site will be those potentially most affected by the selected remedy. MDHES will sponsor a number of public involvement activities during public review and comment on the Proposed Plan and Feasibility Study. MDHES strongly encourages the public to comment on the Feasibility Study and this Proposed Plan.

**PUBLIC COMMENT PERIOD** - The public comment period for the Proposed Plan and the Feasibility Study will be a minimum of 30 days from April **16** through May **16**, 1992. Written and oral comments should be addressed to Kevin Kirley, Project Manager, Montana Department of Health and Environmental Sciences, Cogswell Building, Helena, MT 59620, phone: 1-800-648-8465.

*Cont. on page 2*

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## Mark your calendar (Cont. from page 1)

**PUBLIC MEETING/HEARING -**

MDHES will hold a public meeting/hearing April 30, 1992, at 7 p.m. in the meeting room of the Bozeman Public Library at 220 East Lamme. MDHES and EPA representatives will present a brief summary of the identified preferred remedy and answer questions concerning the Feasibility Study and this Proposed Plan. During the hearing portion of the meeting, MDHES will take formal oral comments. MDHES will have a court reporter to transcribe all comments.

**SITE REPOSITORIES AND ADMINISTRATIVE RECORD -** MDHES has established and maintained repositories for site documents since the beginning of the remedial investigation. The repositories contain the major site documents including the Remedial Investigation Report, the Baseline (Human Health) and Ecological Risk Assessments, and the Feasibility Study, upon which this Proposed Plan is based. These documents may be checked out by the public. Idaho Pole site document repositories are located at the Bozeman Public Library, the County Environmental Health Office in the basement of the Gallatin County Courthouse, at the MSU Library and at the State Library in Helena.

MDHES placed one copy of the administrative record for the site at the Bozeman Public Library. The administrative record consists of specific documents about the site including sampling results, correspondence, and reports upon which the preferred remedy is based. The contents of the administrative record must remain at the Bozeman Public Library, but there is a copier machine on the premises for public use. The MDHES office in Helena also keeps a copy of the administrative record.

**MDHES AND EPA STAFF AVAILABLE FOR THE PUBLIC -**

MDHES and EPA each have a technical specialist and a public involvement specialist working on the Idaho Pole site. MDHES keeps on file all past progress reports (newsletters for the public) and will gladly send them to all requestors. MDHES and EPA personnel who will receive comments or supply additional information include:

Kevin Kirley, MDHES State Project Officer
Jane Stiles, MDHES, Public Information Officer
Montana Department of Health & Environmental Sciences
Cogswell Building
Helena, MT 59620
Phone: 1-800-648-8465 or 406-449-4067 Fax: 406-443-7312

Jim Harris, EPA, Remedial Project Manager
Pam Hillery, EPA, Community Involvement Specialist
U.S.E.P.A., Region VIII, Montana Operations Office
Federal Building, 301 S. Park, Drawer 10096
Helena, MT 59626-0096
Phone: 406-449-5414 Fax: 406-449-5434

# Site background

The Idaho Pole Company (IPC) pole treating facility is located in Bozeman, Montana. The plant began operation in 1946 using creosote to preserve wood. In 1952, the company switched to pentachlorophenol in carrier oil (similar to fuel oil) for the wood treating solution. IPC continues wood treating today with a pressurized heated retort and butt dipping vat.

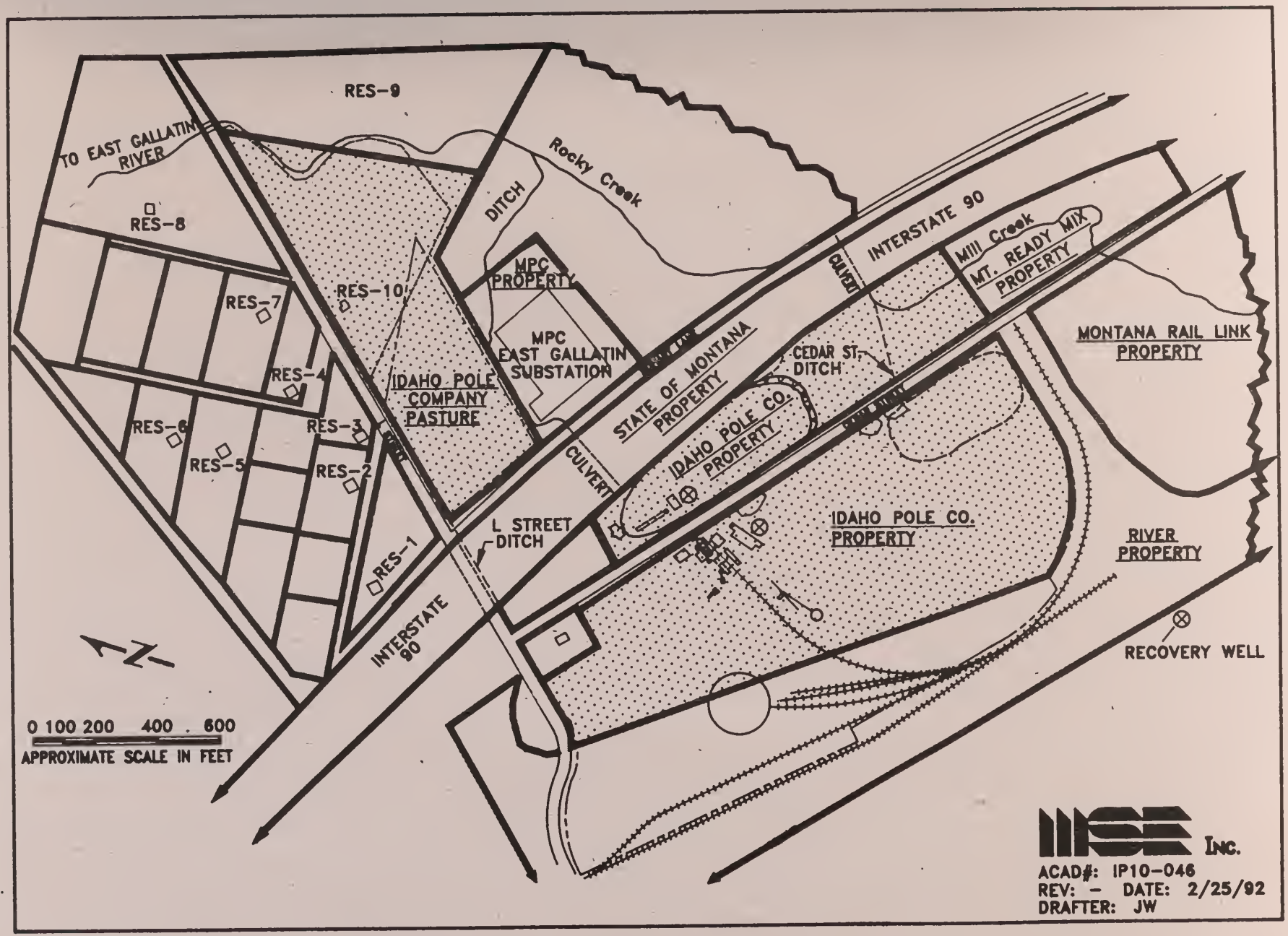
In 1978, the Montana Department of Fish, Wildlife and Parks notified MDHES of a suspected release of oily wood treating fluid from the plant. MDHES found evidence of a release in ditches near the facility and near Rocky Creek. In response, MDHES issued a compliance order on September 29, 1978, notifying IPC of statutory violations and directing the company to stop uncontrolled releases and to clean up spilled treating fluid. IPC introduced measures in an attempt to slow or eliminate movement of the preservative and carrier oil through ground and surface water and into private wells. IPC installed and operated an interceptor drain with a sump and an interceptor trench adjacent to U.S. Interstate 90. Absorbent pads were also used in the culverts and ditches to intercept and collect oily treating fluid.

Culverts under I-90 have been dammed to prevent runoff of contaminated surface water to Rocky Creek. However, during high runoff periods, discharge through the culverts has occurred. No formal water treatment facility has been utilized.

In 1984, IPC independently conducted a remedial investigation to identify the sources and extent of contamination. The remedial investigation was not conducted with supervision from MDHES or EPA. IPC drilled monitoring wells to collect groundwater samples and also collected soil and surface water samples. MDHES and EPA concluded that the IPC remedial investigation report was not sufficient to identify sources and to characterize the nature and extent of contamination.

EPA proposed the facility for the the National Priorities List of Superfund sites in 1984. The listing was final in 1986, making the site eligible for federal funds for enforcement, investigation and remediation.

In 1989, MDHES assumed the lead agency role and began the remedial investigation and feasibility study (RI/FS) following the EPA-approved RI/FS Work Plan. MDHES completed all activities required for the remedial investigation and feasibility study. The MDHES remedial investigation complied with Superfund law, defined the nature and extent of contamination and provided data to complete the baseline health and ecological risk assessments. The feasibility study included the development, screening and evaluation of potential site remedies.




STUDY AREA PROPERTY BOUNDARY MAP
IDAHO POLE COMPANY NPL SITE, BOZEMAN, MONTANA

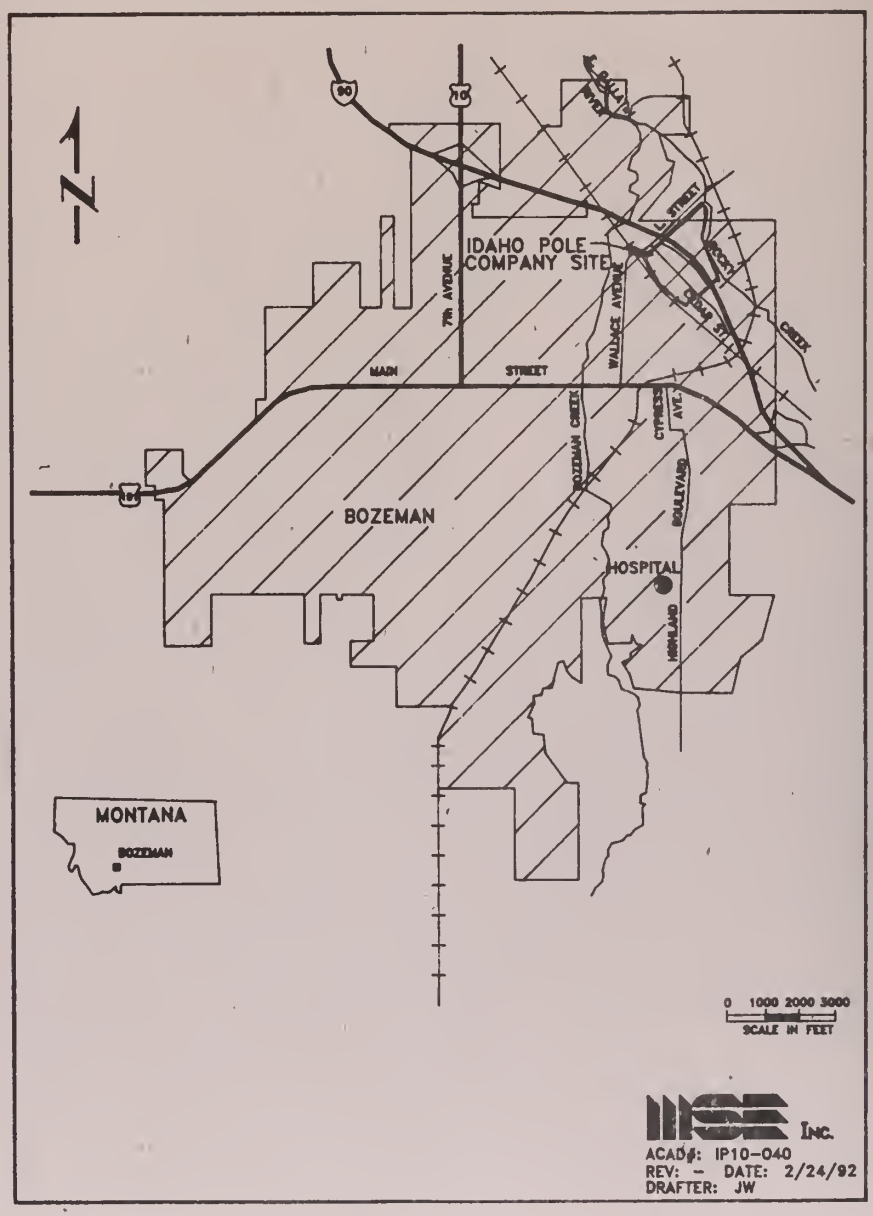
# Site remedy: the strategy

MDHES and EPA have developed an overall approach to address potential threats posed by hazardous substances at the site. There are two principal contaminated media at the Idaho Pole site: groundwater and soil. Groundwater and soil are contaminated with oily wood treating fluid containing carrier oil and pentachlorophenol. The contaminants of concern in soil and groundwater include pentachlorophenol, polynuclear aromatic hydrocarbons and dioxins/furans.

Because soil and groundwater have different physical and chemical characteristics, MDHES evaluated potential remedies for each. The first step of the identified preferred remedy at Idaho Pole will be removal and treatment of the contaminated soil and oily treating fluid in order to eliminate or reduce the continuing release of hazardous substances to soils and groundwater. This action will reduce or eliminate potential threats to people, plants and animals.

It is unlikely that all of the contaminated soil and oily wood treating fluids can be removed. Therefore, additional measures will be necessary to limit the potential for continued contamination of groundwater and subsequent potential exposure to water well users. A portion of the oily treating fluid floats on top of groundwater in the pole plant area and extends to an area known as the Idaho Pole pasture. Under the preferred remedy, groundwater immediately north or downgradient (the groundwater equivalent of downstream) of the pole plant will be extracted from the ground to remove oily treating fluid and limit the spread of contamination during the cleanup period. Until the time that groundwater has reached cleanup requirements, treatment at private wells that are contaminated will ensure protection of residents from long-term health effects. In conjunction, the preferred remedy requires continued periodic sampling of residential and monitoring wells to detect any movement of hazardous substances and to monitor the effectiveness of the remedy.

**Don't forget! Public comment period on the Idaho Pole Feasibility Study is April 16 - May 16, 1992.**




VICINITY MAP
IDAHO POLE COMPANY NPL SITE BOZEMAN, MONTANA

# What risks does the site pose?

As part of the remedial investigation and feasibility study, risk assessments were developed to help MDHES and EPA determine actions necessary to reduce actual and potential risks from hazardous substances at the site. Risk assessments (human health and ecological) were conducted at the site with the following objectives:

- provide an analysis of baseline risk (potential risk if no remedy occurs) and help determine the need for action;
- provide a basis for determining cleanup levels (concentrations) that are protective of public health and the environment;
- provide a basis to compare potential health and ecological impacts of various cleanup alternatives; and
- provide a consistent process to evaluate and document potential public health and ecological threats at the site.

**Human health risks:**

Exposure pathways are ways that people may come in contact with contaminants. The potential pathways for the Idaho Pole site include inhalation, ingestion and skin contact. Please refer to the graphic below. MDHES has concluded through the baseline risk assessment that there are excessive human health cancer risks and excessive non-cancer health hazards associated with hazardous substances at the site. Therefore, remedial action is required in order to reduce these potential risks.

**Ecological risks:**

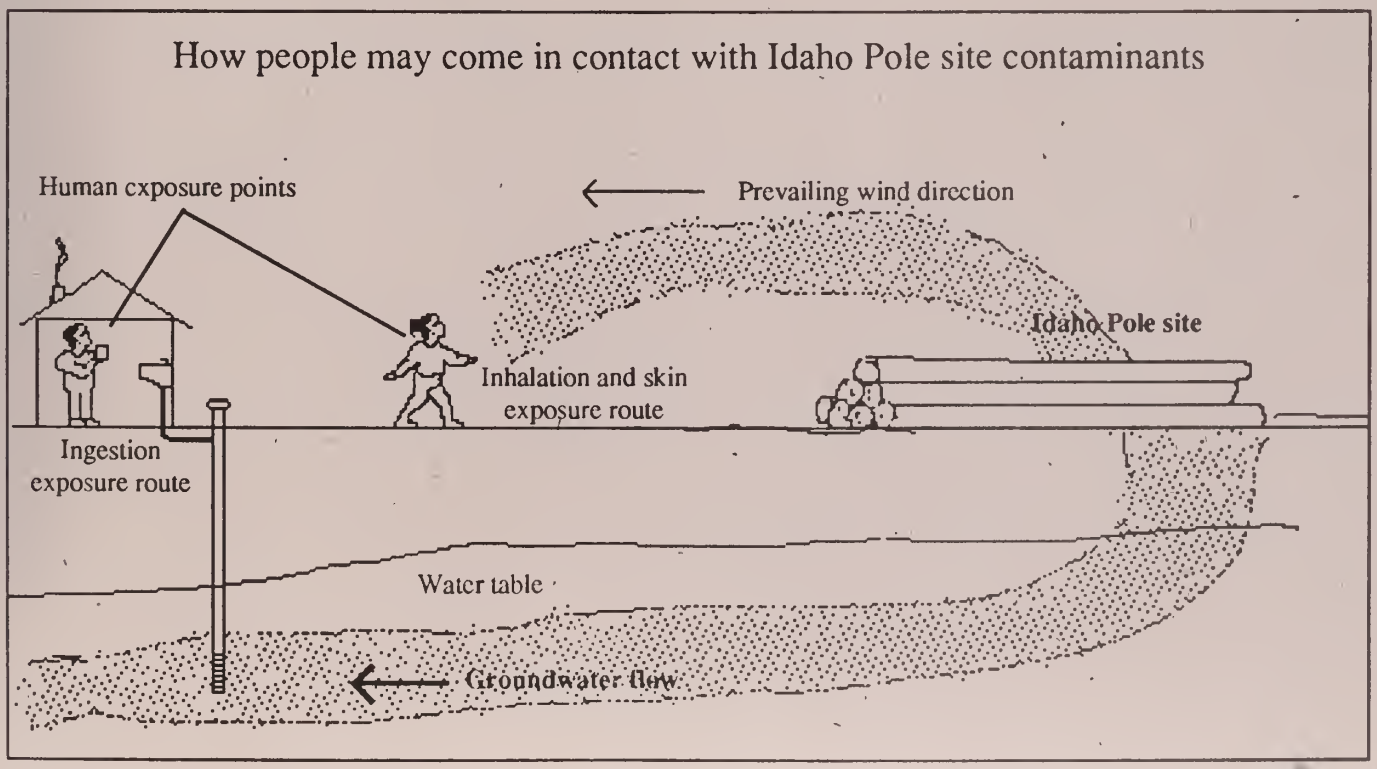
The ecological risk assessment for the Idaho Pole site evaluated the potential for harm to terrestrial and aquatic populations and food chains following the ingestion of contaminants. MDHES and EPA concluded that the Idaho Pole site poses no ecological threat.

**Will the preferred remedy reduce site risk?**

Pursuant to the National Contingency Plan, the goal of the remedial action is to bring potential cancer risk to a range of between 1 in 10,000 and 1 in 1,000,000 additional cancers caused by site contamination. Potential noncancerous adverse health effects are evaluated against the health hazard index of 1.0. The baseline risk assessment identified potential cancer risks greater than 1 in 1,000 and health hazard indices exceeding 1.0 indicating that remedial action is needed.

Potential cancer risks for ingestion ranged from 6 in 1,000,000,000 to 6 in 10 and for direct contact risks ranged from 9 in 10,000,000,000 to 3 in 1000. Potential risks for inhalation were at 1 in 1,000,000 or less. Potential noncancerous health hazard indices ranged from extremely low to as high as 4.5

Actual or threatened releases of hazardous substances from this site, if not addressed by cleanup, may present a current or potential threat to public health, welfare or the environment. The detailed evaluation of alternatives compared each alternative for its ability to reduce potential health risks. Cleanup which addresses potential cancer risks will also address potential non-cancer health hazards.



# What are the alternatives?

A brief description of the site cleanup alternatives the agencies considered in the Feasibility Study report follows. The remedial cleanup alternatives were divided into two categories: soil and groundwater.

Institutional controls would be used in conjunction with soil and groundwater alternatives and may include restrictions on groundwater use, well drilling and residential and commercial land use. Installation and maintenance of additional temporary residential water treatment systems may be necessary if private well monitoring results indicate a potential health risk.

The estimated cost of each alternative include capital cost and annual operation and maintenance cost. The estimated costs for the soil and groundwater alternatives represent a risk cleanup level protective for current land use and for domestic water use respectively. The estimated costs for the soil alternatives represent a cleanup level for residential land use that will reduce the excess cancer risks to less than 1 in 100,000 and for industrial land use to less than 1 in 1,000,000. The groundwater cleanup levels reflect an excess cancer risk of less than 1 in 1,000,000.

## SOIL ALTERNATIVES

**ALTERNATIVE 1**
**NO ACTION**

Superfund law requires that agencies consider the no action alternative. This alternative is used as a baseline against which to compare the other alternatives. As defined in the Idaho Pole RI/FS, no action means that a remedy would not be conducted.

**ALTERNATIVE 2**
**SURFACE CAPPING**
Estimated cost: $ 1,329,577
Estimated time: 1 year

This alternative would involve covering contaminated areas with a clean, impermeable material. This alternative was only considered for the former roundhouse area. The surface cap would require one construction season to install. Resource Conservation and Recovery Act landfill regulations would apply to this alternative.

**ALTERNATIVE 3**
**EXCAVATION AND TREATMENT USING AN ON-SITE OR OFF-SITE INCINERATOR**
Estimated cost: $91,126,534
Estimated time: 1-1/2 years

Contaminated soil would be excavated and super-heated in an on-site or off-site incinerator. The high temperatures effectively destroy the site contaminants. The substantive requirements for a Resource Conservation and Recovery Act permitted incinerator would be met for this alternative. Resource Conservation and Recovery Act permit-by-rule requirements would apply to discharges to Publicly Owned Treatment Works.

**ALTERNATIVE 4 (Preferred remedy)**
**EXCAVATION, RECOVERY, AND SOLID-PHASE OR SLURRY-PHASE BIOLOGICAL TREATMENT**
Estimated cost: $8,164,357
Estimated time: 10 years

Contaminated soil would be excavated. The soil would then be pretreated to remove the oily wood treating fluid. This recovered fluid would be be recycled or disposed. The soil would then be treated biologically to break down contamination. This portion of the process would occur in a land treatment area or tank. After treatment is complete the soils would be returned to the excavated area or placed in a repository, depending upon the effectiveness of the treatment process. Land treatment would require compliance with a Resource Conservation and Recovery Act Subtitle C requirements. Land disposal restrictions would apply if treatment standards are finalized prior to the Record of Decision.

**ALTERNATIVE 5**
**EXCAVATION, RECOVERY, AND CRITICAL FLUID SOLVENT EXTRACTION WITH RECYCLING OR DISPOSAL**
Estimated cost: $82,232,520
Estimated time: 1-1/2 years

Contaminated soil would be excavated. Oily wood treating fluid would be recovered and recycled, treated or disposed. Hazardous substances would be extracted from the soil using liquefied propane in a series of tanks. After treatment, the soil would be returned to the excavated area and recovered hazardous substances would be recycled to wood treating or disposed. Land disposal restrictions would apply if treatment standards are finalized prior to the Record of Decision. Resource Conservation and Recovery Act Subtitle C waste pile requirements would apply to the construction and operation of a waste storage pile. Resource Conservation and Recovery Act permit-by-rule requirements would apply to discharges to Publicly Owned Treatment Works. Federal, Insecticide, Fungicide and Rodenticide Act requirements would apply to reuse/recycling of recovered oily wood treating fluid.

**ALTERNATIVE 6 (Preferred remedy)**
***IN SITU* (IN-PLACE) TREATMENT USING STEAM/ HOT WATER FLUSHING, PRODUCT RECOVERY AND BIOLOGICAL TREATMENT POLISHING**
Estimated cost: $10,841,429
Estimated time: 10 years

Soil contaminated with oily wood treating fluid would be left in place and flushed with hot water or steam and possibly a non-hazardous surfactant causing the fluid to wash out. The flushed water, associated contaminants and oily treating fluid would be collected in a series of trenches on both sides of U.S. Interstate 90. The wood treating fluid would be skimmed from the water for recycling or disposal and the water would be treated in a separate system (Groundwater Alternative 3). Hydrogen peroxide (as a source of oxygen) and possibly

nutrients would be added to the soil to enhance biological degradation of soil contaminants. Land disposal restrictions would apply if treatment standards are finalized prior to the Record of Decision. Safe Drinking Water Act requirements would apply to Class IV injection wells. Underground tanks would meet state and federal Underground Storage Tank requirements. Federal, Insecticide, Fungicide and Rodenticide Act requirements would apply to reuse/recycling of recovered oily wood treating fluid. Discharges to Publicly Owned Treatment Works would comply with Clean Water Act requirements.

## GROUNDWATER ALTERNATIVES

**ALTERNATIVE 1**
**NO ACTION**

Superfund law requires that agencies consider the no action alternative. This alternative is used as a baseline against which to compare the other alternatives. As defined in the Idaho Pole RI/FS, no action means that a remedy would not be conducted.

**ALTERNATIVE 2**
**PUMP AND TREAT USING ACTIVATED CARBON ADSORPTION**
Estimated cost: $4,413,555
Estimated time: 10 years

A groundwater extraction system using wells would capture the contaminated groundwater. The water would pass through activated carbon which would remove the hazardous substances. The spent carbon would be reactivated using thermal or biological methods on-site or be sent off-site to a commercial reactivation process. The treated water would be discharged back into the aquifer in the contaminated area to enhance flushing or would be discharged to the municipal wastewater treatment plant. Discharges to Publicly Owned Treatment Works would comply with Clean Water Act requirements. Injection wells would comply with Safe Drinking Water Act requirements for Class IV wells. Federal, Insecticide, Fungicide and Rodenticide Act requirements would apply to reuse/recycling of recovered oily wood treating fluid.

**ALTERNATIVE 3 (Preferred remedy)**
**PUMP AND TREAT USING A FIXED FILM BIOLOGICAL REACTOR**
Estimated cost: $2,519,235
Estimated time: 15 years

A groundwater extraction system would capture the contaminated groundwater. Microbes that destroy contaminants would be added to the water. The treated water would be discharged back into the aquifer in the contaminated area to enhance flushing or would be discharged to the Bozeman municipal wastewater treatment plant. An additional option is to include an activated carbon polishing step following biological treatment. Discharges to Publicly Owned Treatment Works would comply with Clean Water Act requirements. Injection wells would comply with Safe Drinking Water Act requirements for Class IV injection wells. Federal, Insecticide, Fungicide and Rodenticide Act requirements would apply to reuse/recycling of recovered oily wood treating fluid. Sludge disposal would require compliance with Resource Conservation and Recovery Act Subtitle C requirements. Land disposal restrictions would apply if treatment standards are finalized prior to the Record of Decision. Resource Conservation and Recovery Act Subtitle C closure and post closure requirements would be met.

**ALTERNATIVE 4 (Preferred remedy)**
**IN-SITU BIOLOGICAL TREATMENT**
Estimated cost: $1,878,447
Estimated time: 10 years

Hydrogen peroxide, nitrogen and phosphorus would be injected into the contaminated groundwater area to enhance the natural biological breakdown of contaminants by bacteria living in the aquifer. This would also result in biological breakdown of contaminants in soil below the water table. Injection wells would comply with Safe Drinking Water Act requirements for Class IV injection wells. Discharges to Publicly Owned Treatment Works would comply with Clean Water Act requirements.

# Evaluating the alternatives

Superfund law requires that the agencies evaluate and compare the remedial cleanup alternatives based on the nine criteria listed below. The first two criteria are threshold criteria and must be met. The Proposed Plan discusses the evaluation and comparison based on the first eight criteria. After the public comment period is complete, the agencies will evaluate the alternatives based on the remaining criterion of community acceptance and present that evaluation in the Record of Decision. The preferred remedy must provide the best balance of the selection criteria.

**The nine criteria:**

1. *Overall protection of human health and the environment* addresses whether or not a remedy provides adequate protection and describes how potential risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.

2. *Compliance with applicable or relevant and appropriate requirements* addresses whether or not a remedy will comply with federal and state environmental laws.

3. *Long-term effectiveness and permanence* refers to the ability of a remedy to maintain reliable protection of human health and the environment over time.

4. *Reduction of toxicity, mobility and volume through treatment* refers to the degree that the remedy reduces toxicity, mobility and volume of the contamination.

5. *Short-term effectiveness* addresses the period of time needed to complete the remedy, and any adverse impact on human health and the environment that may be posed during the construction and implementation period.

6. *Implementability* refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

7. *Cost* evaluates the estimated capital costs and operation and maintenance costs of each alternative.

8. *State agency acceptance* indicates whether, based on its review of the information, the state concurs with, opposes or has no comment on the preferred alternative. However, for the Idaho Pole site, the state is the lead management agency and EPA is the support agency. As such, the state has identified the preferred remedy and EPA has agreed with that identification.

9. *Community acceptance* is based on whether community concerns are addressed by the preferred remedy and whether or not the community has a preference for a remedy. Although public comment is an important part of the final decision, MDHES and EPA are compelled by law to balance community concerns with all of the other criteria. After the public comment period, MDHES and EPA will complete the evaluation of the alternatives based on public comments received.

## Evaluation and comparison:

The following summary of the evaluation and comparison of alternatives is presented in greater detail in the Feasibility Study. The discussion covers the soil alternatives, followed by a discussion of the groundwater alternatives.

**Soil alternatives:**

MDHES determined that contaminated soil exists underneath structures at the Idaho Pole site. Those structures include the Idaho Pole Company treating buildings, U.S. Interstate 90 and the Montana Power Company sub-station. Contaminated soil exists in the wood treating facility and extends to the pasture north of I-90 and in two intermittent ditches. Finally, former roundhouse area soil is the other significantly contaminated area of the site.

The preferred remedy for soil underneath existing structures is Alternative 6 (Soil Flushing and *In Situ* Biological Treatment) and for all other contaminated soil is Alternative 4 (Excavation and Biological Treatment).

1) *Overall protection of public health and the environment:* all of the alternatives except no action and surface capping are expected to provide overall protection and reduce potential health risks. Surface capping would provide direct contact protection in the roundhouse area only as long as the cap remained intact. Surface capping does not prevent potential groundwater contamination.

2) *Compliance with applicable or relevant and appropriate requirements:* all of the alternatives except no action are expected to provide compliance with applicable or relevant and appropriate legal requirements.

3) *Long-term effectiveness and permanence:* all of the alternatives except no action and surface capping would meet long-term effectiveness with incineration rating the highest. The solvent extraction alternative also would be effective but it is not as well proven; biological treatments have proven successful at similar sites; surface capping offers limited permanence due to the relative insecurity of the cap.

4) *Reduction of toxicity, mobility and volume:* incineration ranks highest, followed by solvent extraction and biological treatment. Surface capping only reduces mobility in terms of limiting contaminants to the air or to coming in direct contact with people, and it does not prevent groundwater contact with contaminants.

5) *Short-term effectiveness:* the time needed to conduct the alternativesis 1-1/2 years for incineration and solvent washing and 10 years for the biological treatments. Surface capping can be accomplished in one construction season. Incineration may pose adverse health impacts to workers and the surrounding community. Solvent extraction presents to workers a potential hazard associated with the use of heated and pressurized solvent.

6) *Implementability:* the incineration alternative lacks availability of an adequate incinerator, has excessive cost and a history of public opposition. All alternatives with exception of the soil flushing call for removal of the treatment plant structures, U.S. Interstate 90 and a portion of the electrical sub-station in order to reach all contaminants. This feature decreases their implementability. *In situ* treatment has the advantage of leaving the structures in place.

7) *Cost:* the biological alternatives are much less expensive than solvent extraction and incineration. Surface capping is overall the lowest cost.

8) *State agency acceptance:* the state has identified the preferred remedy and EPA has agreed with that identification.

9) *Community acceptance:* after the public comment period, MDHES and EPA will complete the evaluation of the alternatives based on public comments received.

**Groundwater alternatives:**

The key element in addressing groundwater contamination is the removal or reduction of sources of

contamination to groundwater. Therefore the effectiveness of the groundwater alternatives is directly dependent upon the effectiveness of the soil alternatives. The preferred remedy for groundwater was identified with this dependence in mind. The primary focus of the preferred remedy is contaminated groundwater under and around the oily wood treating fluid.

The preferred remedy for groundwater under the oily wood treating fluid is Alternative 3 (Pump and Biological Treatment) and for the contaminated groundwater around the oily wood treating fluid is Alternative 4 (*In Situ* Biological Treatment).

1) *Overall protection of public health and the environment:* all of the alternatives except the no action alternative provide protectiveness with the key consideration being the ability of the soils alternatives to reduce the principal sources of continuing groundwater contamination.

2) *Compliance with applicable or relevant and appropriate requirements:* all of the alternatives except the no action alternative are expected to comply with applicable or relevant and appropriate requirements. Pump and treat alternatives may reduce contaminant levels of treated water to the cleanup requirements sooner than *in situ* biological treatment. Nevertheless, pump and treat techniques have not proven effective at other sites in reaching remedial cleanup levels for groundwater without the use of *in situ* biological treatment.

3) *Long-term effectiveness and permanence:* groundwater extraction by pumping and treating with carbon or with a biological treatment would provide the best overall long-term reduction in contaminant levels. This assumes that all contaminants could be treated in the treatment unit. The advantage of the *in situ* biological treatment is that subsurface contaminants sources such as soil would be treated. Additionally site hydrogeological conditions are favorable for *in situ* treatment.

4) *Reduction of toxicity, mobility and volume:* the alternatives all provide reduction in toxicity, mobility and volume through treatment of contaminants. The carbon or biological pump and treat systems do not adequately address contaminants remaining in contact with the groundwater. The *in situ* treatment would enhance biodegradation of groundwater and the associated contaminated soils. Carbon treatment only transfers the contaminants from one medium (groundwater) to another (carbon). This necessitates treatment or disposal of the carbon.

5) *Short-term effectiveness:* all of the alternatives require approximately 10-15 years for the groundwater to reach remedial requirements. During this time, the community would be protected from excess contaminant levels by institutional controls and/or treatment of residential well water. Environmental impacts and worker protection are relatively equal for all alternatives.

6) *Implementability:* all of the alternatives are readily implementable with carbon treatment the most proven technology. Some of the pumping equipment used for pump and treatment may be used for the *in situ* biological treatment.

7) *Cost:* pump and treat alternatives are more expensive than *in situ* treatment.

8) *State agency acceptance:* the state has identified the preferred remedy and EPA has agreed with that identification.

9) *Community acceptance:* after the public comment period, MDHES and EPA will complete the evaluation of the alternatives based on public comments received.

## Conclusions:

The combination of alternatives constituting the preferred remedy were identified because they represent the best balance of considerations using the selection criteria. The identified combination of alternatives is superior in terms of overall protection, implementability and cost. The selected combination meets at least as well as the other alternatives, long and short term effectiveness and compliance with applicable or relevant and appropriate requirements. While certain alternatives appear to better satisfy individual selection criteria, the combination of alternatives identified for the preferred remedy more fully satisfies the entire range of the selection criteria.

MDHES and EPA believe that the preferred remedy satisfies the statutory requirements in the Comprehensive Environmental Response, Compensation and Liability Act, section 121 (b), and that the preferred remedy:

-is protective of human health and the environment;
-complies with applicable or relevant and appropriate requirements;
-is cost effective;
-uses permanent solutions and alternative treatment technologies to the maximum extent practicable; and
-satisfies the statutory preference for treatment as a principal element of the preferred remedy.

## TOLL-FREE SUPERFUND HOTLINE

If you have questions, comments or concerns about a Superfund site in Montana, or about Superfund in general, please call our toll-free hotline. The hotline is answered by Superfund staff from 8 a.m. to 5 p.m. weekdays, except holidays and by answering machine during off-hours. Can't call us during the day? Leave us a message. In-state use only!

**1-800-648-8465**

# Glossary

**Administrative record:** The files containing all the documents used to select a remedy at a superfund site.

**Baseline health and ecological risk assessments:** Studies conducted as part of the remedial investigation describing the risks posed to public health and the environment at a Superfund site.

**Capping:** Covering contaminated soil with layers of barrier materials.

**Groundwater:** Water contained beneath the earth's surface.

***In-situ*:** Activity occurring in-place or without removing the contaminated material.

**Institutional controls:** Rules, regulations, laws, or covenants that may be necessary to assure the effectiveness of a cleanup alternative.

**National Contingency Plan (NCP):** The federal regulations directing how Superfund is conducted.

**Operation and maintenance costs:** The annual costs of ensuring that a remedy is protective.

**Plume:** the three-dimensional volume of contaminated material in the groundwater, so named because it's shape often resembles a feather or "plume."

**Potentially responsible party:** Individual or organization that may be responsible for cleanup under Superfund law because of their ownership or operation of a site where hazardous materials have been released.

**Remedy:** the response that addresses potential or actual threats to public health, welfare and/or the environment.

**Record of decision (ROD):** A public document that explains which remedy will be used at a Superfund site. The record of decision includes the explanation of the agency's rationale for choosing a remedy.

**Remedial investigation/feasibility study (RI/FS):** During the remedial investigation, the types, amounts, and locations of contamination at a site are identified. In the feasibility study, alternatives for site remedy are identified, screened and compared.

## SPEAK UP!
## PUBLIC MEETING AND HEARING

Thursday, April 30, 1992
7 p.m.
Bozeman Public Library meeting room

The Montana Department of Health and Environmental Sciences will hold a public meeting and hearing to discuss the Idaho Pole Superfund site preferred remedy and to take formal oral public comment on the following documents for the Idaho Pole Superfund site: Proposed Plan, Feasibility Study, Remedial Investigation, Risk Health Assessment, and Ecological Risk Assessment

The public is encouraged to participate in the Superfund remedy selection process.

For more information, contact Site Project Officer Kevin Kirley or Public Information Officer Jane Stiles at MDHES in Helena 1-800-648-8465

## ARE YOU ON OUR MAILING LIST?

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